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JOURNAL

CITY PLANNING DIVISION

Proceedings of the American Society of Civil Engineers

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Paper 1387 October, 1957 CP 2

Journal of the
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THE CURRENT NATIONAL PICTURE IN URBAN RENEWAL[a]

Richard L. Steiner,[1] M. ASCE
(Proc. Paper 1387)

A major concern of cities today is their massive deteriorated and obsolete sections and those areas which are perceptibly started on the down grade. These conditions affect the physical and economic health of communities, their tax base, the need and demand for public services and, most importantly, an ever-increasing number of people who live and work in such areas. No longer is it necessary to argue the existence of these conditions and the problems they create. They are equally well known to social welfare groups, public officials and business groups. An ever-increasing number of cities are very much aware of what they face and are taking bold leadership in doing something about it.

The Federally-aided Urban Renewal Program is designed to assist cities in meeting this problem. Most ASCE members are familiar with the types of Federal aid and how the assistance program operates. Two points, however, seem worth emphasizing:

1. The Congress has maintained its position that the primary and principal objective of Federal assistance is the elimination of bad housing and increasing the supply of good housing. At least one of these two objectives must be met in every project. Many planners, and others as well, are concerned about revitalization of commercial and industrial areas where such uses should continue, but such activity remains outside the purposes for which Federal assistance can be made available unless there is at least a substantial housing relationship.

2. The loan and capital grant assistance provided cannot be used for construction or repair of buildings, but FHA mortgage insurance is available on special liberal terms for the construction or rehabilitation of housing in urban areas. Federal financial assistance can be applied to the installation or reconstruction of streets, utilities, playgrounds and similar public improvements provided, and this is an important proviso, they are justified as an essential part of the project aimed at one of the housing objectives mentioned

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a. Presented at a meeting of the American Society of Civil Engineers in Pittsburgh, Pa., October 18, 1956.

1. Acting Commr., Urban Renewal Administration Housing and Home Finance Agency, Washington, D. C.

previously. The Congress has made it very clear that it did not intend to authorize Federal aid to local public works programs which do not have a direct relationship to the improvement of the local housing situation.

The response to this Federally-aided program has been tremendous. For some time after it was initiated late in 1949 it may have seemed to develop slowly. This was only natural, for every project was something of an experiment in a new and complicated field. While experimentation will continue for many years before methods and techniques become at all standardized, the program is now at the point of moving into volume production. However, it probably never will be a mass production operation, since each project must be custom made to the situation and considerations affecting a specific area and its relationship to the city in which it is located. To date $710,656,564 of capital grant funds have been reserved for specific projects and reservations are currently running at a rate of approximately a million dollars per working day. The Congress has authorized one billion dollars of capital grant funds which, it is estimated, will be exhausted about the end of calendar year 1957. The rate at which the program is growing will also be apparent when we realize that the initial authorization of $500,000,000 made by the Congress in 1949 lasted until June 1955, a six-year period, while the additional authorization of $500,000,000 made then will apparently be used up in about two and one-half years.

As of September 30, 1956, these capital grant reservations covered 401 projects in 243 localities. While 17 of the 18 largest cities in the country—those whose 1950 population was 500,000 or more—are moving forward with extensive urban renewal programs, this is by no means a big city program. Projects are going forward in 58 cities having a 1950 population of less than 10,000, in 50 cities with a population of 10,000 to 25,000, and in 25 cities of 25,000 to 50,000 population. To put these figures another way, on September 30 this year capital grant reservations had been made for projects in 133 cities of less than 50,000 population in 1950 as compared with 17 cities of 500,000 or more.

Concerning the status of these 401 projects, 130 were in the execution stage, i.e. actual clearance and/or renewal activity was under way, final planning was being done on 97, and 174 were in the preliminary survey and planning stage. An analysis of the September 30 status of the work on those in the execution stage has not yet been completed, but, on June 30, when there were 125 in that stage, land acquisition had been completed on 44, site clearance on 34, site improvements on 8, and land disposition on 13. Urban renewal activity has ceased to be limited to project planning only. Some real accomplishment is beginning to emerge.

There are some important relationships of urban renewal with city planning and with municipal public works undertakings—things in which engineers and ASCE's City Planning Division have a particular interest.

Federal law requires that the urban renewal or redevelopment plan for each project be found to conform to a general plan for the locality in which the project is located before financial assistance can be given for carrying out the project. The law does not define the term "general plan." That has been left to administrative determination, but the Urban Renewal Administration has not attempted to define the scope and content of a comprehensive plan in a professional or technical sense. It has established, instead, a minimum scope of planning work which any community must accomplish if its urban renewal activities are to be related to reasonable objectives for future

development. It has been URA's conclusion that this minimum should include a projection of future land use objectives and of the thoroughfares and community facilities necessary to serve properly those objectives, together with zoning and subdivision regulations which provide specific tools and standards for their realization. Certainly, if the urban renewal process in any city is to correct present conditions and past mistakes on any sort of a sound basis, it must be properly related to at least this much of an overall guide to the community's future.

It is also URA's belief, as expressed in requirements with respect to a general plan, that public works or capital improvements programming is essential to sound general planning and to carrying out urban renewal programs. There are two important reasons. First, practically every urban renewal project involves some sort of municipal public works undertakings for which funds must be available when needed. Second, experience has clearly shown that, through skillful advance planning, many public works can be budgeted and used by a city as non-cash local grants-in-aid for its urban renewal projects, thus making it easier for a community to meet its obligation to match Federal funds in the specified ratio of one to two.

This does not mean that urban renewal resolves itself into a public works program. It does mean that the essential expenses which a community must or should incur for its public works budget can be shaped substantially to the carrying out of an urban renewal program.

An analysis of the local grants-in-aid for urban renewal projects now in the execution stage indicates that almost fifty percent will be provided in cash which the cities will provide through bond issues, special appropriations and similar devices. However, a nearly equal amount is being provided through locally-financed site improvements in the project areas and through other public improvements and facilities which serve and support the renewal objectives of the projects.

Every city has a whole series of improvements for which it is making plans. They are certain to include streets and highways, sewerage and drainage projects, schools, parks and play grounds. The more cities are able to devote and schedule definite portions of their capital improvements expenditures in support of urban renewal on a systematic basis, the further they will be on the way to the reclamation of their blighted areas.

Public works and improvements which become a part of the planning and execution of urban renewal projects have often involved undertakings of large magnitude and complexity which are of special interest to engineers.

Urban highways are probably the most frequently occurring type. In Norfolk, Virginia; New Haven, Connecticut, and Nashville, Tennessee, for example, major through routes are basic factors in the planning and execution of urban renewal operations now under way. The Lower Hill project in Pittsburgh similarly involves an extremely complex system of through highway interchanges and their connections with the local street system. These inter-relationships surely will be of increasing importance as operations under the new Federally-aided urban highway program get under way.

Drainage and flood control operations are another important type. In Knoxville, Tennessee, the redevelopment of a slum area after its clearance will be primarily directed to correcting a serious flood problem created by a tortuous and inadequate stream channel, thus making previously unsuitable land available for new industrial and residential development. Urban renewal projects being undertaken in a number of Connecticut cities hit by last year's

flood disaster will involve operations aimed at preventing similar destruction in the future.

Other special and novel engineering problems of various kinds are constantly coming up. The Eastwick project in Philadelphia—which takes in over 2,500 acres—will require several feet of fill over almost the entire area in order to produce sufficient elevation for storm and sanitary drainage. Some portions may even be below the high water peak. This involves dikes and special drainage and pumping arrangements. Because of time required for compaction of fill, special street and utility installations designed to be amortized over a short life will be installed first and then replaced later by permanent installations after the fill has become stabilized. In Minneapolis a large part of a slum area being cleared had been built over an old peat bed. A special drainage system and fill operation had to be designed to make the land re-usable, and the redevelopment plan had to be worked out so as to limit that part of the project area to open spaces and light structures.

While the major portion of urban renewal projects will be used for housing, many other opportunities for exciting architectural and engineering designs are being provided on large acreage tracts at prime locations in the centers of cities. These include expansion of hospital, educational, and public building centers.

There is an emerging situation which seems to be of great significance in the national scene. This is the increasing recognition of the importance of the urban renewal function in local government organization.

As renewal operations have expanded, many cities have seen that the job to be done involves such a wide range of activities and so many local agencies that coordination cannot be left to chance. New positions—commonly called housing and redevelopment coordinators or civic development coordinators—have been created, generally attached to the chief executive's office. Some months ago a special task force of nationally recognized specialists in housing, urban renewal, planning, and local government administration was engaged by the City of Baltimore to study how the city should organize to carry out a comprehensive program of urban renewal. This task force has just issued a report which will receive wide attention. It recommends a major governmental re-organization under which all urban renewal and housing functions would be combined and placed on a par with public works functions, the position of the city planning commission would be reconstituted on a more influential basis, and a general development coordinator concerned with all these activities would be established in the Mayor's office.

These recommendations may well be indicative and prophetic of a trend for reasons which seem inherent in the present developmental stage of our cities. The older cities and many municipalities at the center of metropolitan areas are becoming more and more saturated with development—in fact, some are completely saturated. As this happens, the cities are no longer required to make major expenditures of time and money on extensions of public services as is the case in the suburbs. Attention will be concentrated more and more on the redevelopment and renewal of the older sections, on the conservation of the newer and healthier areas, and on the readjustments of public services and facilities which this will require. For these older cities and central municipalities, urban modernization will attract major attention and effort, replacing earlier efforts at urban development.

Paper 1388 October, 1957 CP 2

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PLANNING PROBLEMS IN THE WASHINGTON METROPOLITAN AREA OF VIRGINIA[a]

John E. Woodward, Jr.[b]
(Proc. Paper 1388)

SYNOPSIS

The Washington metropolitan area in Virginia is undergoing tremendous growth. Comprehensive, coordinated planning by all the communities involved is necessary for the solution of the problems resulting from this rapid expansion. The purpose of this paper is to review generally the problems facing planners in the area.

For thousands of years man has lived in communities. At first these communities were collections of huts and crude shelters. During the Dark Age man found company and protection in larger concentrations of people. These concentrations grew into small cities and finally larger ones. Some of these municipalities went through a full-growth cycle and even disappeared. Until recently the process of municipal development has been haphazard. Governments have shown little or no foresight; they have been content to rule on a day-to-day basis. Modern civilization, however, is changing and growing at such a rapid pace that urban development can no longer be allowed to take place unsupervised.

The modern city is not simply one political unit, but consists usually of several communities whose well-being is tied together geographically and economically. Each community must assume the task of planning for its future. Moreover, the entire area must cooperate and plan together so that there will be no conflict within the region. Although urban areas exist for varying economic purposes, the paramount importance of planning is common to all.

Note: Discussion open until March 1, 1958. Paper 1388 is part of the copyrighted Journal of the City Planning Division of the American Society of Civil Engineers, Vol. 83, No. CP 2, October, 1957.

a. Presented at the Annual Meeting, Virginia Section, American Society of Civil Engineers, Richmond, Virginia, December 7, 1956.

b. Cadet, First (Senior) Class, Department of Civil Engineering, Virginia Military Institute, Lexington, Virginia.

Washington, the Nation's Capital, demonstrates the necessity for, and the possibilities of, progressive urban planning. Although this paper deals primarily with the portion of the Washington metropolitan area on the Virginia side of the Potomac, this fact should not be construed as an attempt to isolate a part of the region. The division is made merely to obtain a smaller area upon which to focus attention. Throughout the ensuing discussion, the overall unity of the entire National Capital region must be recognized.

The National Capital region is defined by the National Capital Park and Planning Commission as applying to "all area included in the District of Columbia; Montgomery and Prince George Counties, Maryland; the cities of Alexandria and Falls Church; and Arlington and Fairfax Counties, Virginia."[1] The latter four subdivisions, all in Virginia, comprise the area discussed in this paper. For the purpose of clarity, the part of the National Capital region in Virginia will henceforth be termed the "Virginia area."

Population Growth

The problems of the Virginia area have been precipitated by the comparatively recent and rapid expansion of the Federal Government. The most obvious result of this expansion is the phenomenal rise in population throughout the entire region.

Table 1 gives the populations in the National Capital region from 1900 to 1955. Table 2 shows the percent increase. In 1900 the National Capital region had a population of slightly under 400,000. For the first three decades of this century, the entire region gained about 300,000 people, not quite doubling its population in thirty years. The growth was fairly evenly distributed, with the exception of Arlington County, which had more than four times as many people in 1930 as in 1900. Between 1930 and 1940 the rate of increase for the region doubled, producing an increase of 300,000 people in ten years. Again, Arlington led all areas, showing a gain in excess of 100%. The District of Columbia lagged behind the other areas in rate of growth. Primarily because of World War II, the decade between 1940 and 1950 was a period of rapid growth. The population climbed from one million in 1940 to one and one-half million in 1950. While the rate of increase in the District of Columbia was comparatively small, growth in the outer areas in Maryland and particularly in Virginia was overwhelming. The entire Virginia area increased 131%. Fairfax County (including Falls Church) rose from 41,000 to 106,000 people, a jump of almost 160%. Although the increase in the National Capital region leveled off in the last five years, the outer areas are still expanding. The final column in Table 2 aptly illustrates the contrast between the District of Columbia and the suburban areas in Maryland and Virginia. The population in both states has increased four times as fast as in the Distfict.

Where have all these people come from? Table 3 compares the percent of increase due to migration with that caused by natural increase of births over deaths during the decade 1940-1950. Taken as a whole, almost two-thirds of the increase in the region resulted from migration. About three-fourths of the increase in the outer areas resulted from migration. Eighty-three

1. National Capital Park and Planning Commission, Regional Aspects of the Comprehensive Plan, p. 5.

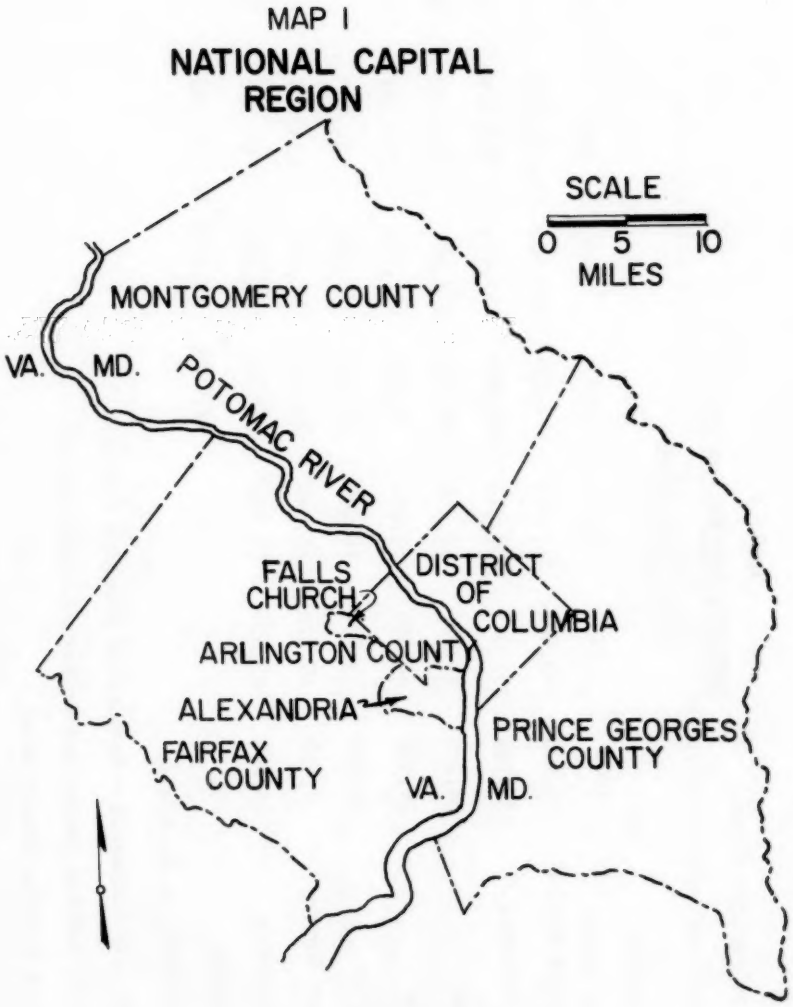
MAP I
NATIONAL CAPITAL REGION
SCALE
0 5 10
MILES
MONTGOMERY COUNTY
VA.
MD.
POTOMAC RIVER
FALLS CHURCH
DISTRICT OF COLUMBIA
ARLINGTON COUNTY
ALEXANDRIA
PRINCE GEORGES COUNTY
FAIRFAX COUNTY
VA.
MD.

Fig. 1.

Table 1

NATIONAL CAPITAL REGION

Total Population
1900-1955

	1900	1910	1920	1930	1940	1950	1955
National Capital Region	378,605	445,401	571,882	672,198	967,985	1,464,089	1,825,100
District of Columbia	278,718	331,069	437,571	486,869	663,091	802,178	855,000
Maryland Area	60,349	68,236	78,268	109,301	173,402	358,583	562,400
Virginia Area	39,538	46,096	56,043	76,028	131,492	303,328	407,700
Alexandria	14,528	15,329	18,060	24,149	33,523	61,787	82,600
Arlington County	6,430	10,231	16,040	26,615	57,040	135,449	157,000
Fairfax County	18,580	20,536	21,943	25,264	40,929	98,557	159,300
Falls Church	a	a	a	(2,019)[a]	(2,576)[b]	7,535	8,800

SOURCE: 1900-1950, U. S. Census

1955 July Estimates - Respective Planning Offices

a - Included in Fairfax County and Arlington County totals.

b - Included in Fairfax County total.

Table 2

NATIONAL CAPITAL REGION

Per Cent Increase in Population
1900-1955

	1900-1910	1910-1920	1920-1930	1930-1940	1940-1950	1950-1955	1900-1955
National Capital Region	17.6	28.4	17.5	44.0	51.2	24.7	382.0
District of Columbia	18.8	32.2	11.3	36.2	21.0	6.6	206.8
Maryland Area	13.1	14.7	39.6	58.6	106.8	56.8	831.9
Virginia Area	16.6	21.6	35.6	73.0	130.7	34.4	931.2
Alexandria	5.5	17.8	33.7	38.8	84.3	33.7	468.6
Arlington County[a]	59.1	56.8	65.9	114.3	137.5	15.9	2,341.7
Fairfax County	10.5	6.8	15.1	62.0	159.2	58.4	804.7

a - Falls Church included in Arlington County and Fairfax County until 1930-1940 when it is included in Fairfax County.

Table 3

NATIONAL CAPITAL REGION

Natural Increase and Migration of Population
By Per Cent

1940-1950

	Total Increase in Population	Natural Increase	Net Migration
National Capital Region	100.0	36.7	63.3
District of Columbia	100.0	64.3	35.7
Maryland Area	100.0	24.2	75.8
Virginia Area	100.0	27.9	72.1
Alexandria	100.0	40.4	59.6
Arlington County	100.0	32.0	68.0
Fairfax County[a]	100.0	17.4	82.6

a - Includes Falls Church

percent of growth in Fairfax County and Falls Church was attributed to this reason. On the other hand, only a third of the gain in the District of Columbia was caused by migration. Obviously the new-comers to the Washington area feel that the suburbs are much more desirable than the District.

What lies ahead? One of the most basic tasks of a planner is to study population trends in order to arrive at a prediction of future population. While these predictions are not expected to be letter-perfect, they must be reasonably accurate. Only if a planner has an approximate idea of the future growth of an area can he intelligently and comprehensively plan ahead for that area. Many predictions of the future growth of the National Capital region have been advanced. Table 4 compares the 1950 census figures with four estimates of population in 1980. While the predictions for the entire region vary from two and one-half to three and one-third million, there is unanimity on several key assumptions. They agree that the District of Columbia will experience very little gain, whereas the Virginia area will double or possibly triple in population. Fairfax County, with the most vacant or empty land of the Virginia communities, will have three, four, or perhaps even five times as many people in 1980. Plate 1 summarizes graphically the past and future population statistics. Semi-logarithmic graph paper has been used to provide a better comparison.

Just as important as population figures are densities. Present and probable densities are given in Table 5. The District of Columbia will change only slightly. The Virginia area will almost double its density, led by Fairfax County which will have about two and one-half times as many people per square mile. The net result will be a tendency toward a leveling out of all the densities in the region.

These population and density statistics indicate the size of the planning problems which are plaguing the National Capital region. The predicted populations will present insurmountable problems unless corrective measures are formulated and enacted promptly.

Economic Aspects of the Area

Population studies are only part of a planner's tools. The economic aspects of the region and its people are equally vital. The National Capital region "is unique in having Government as its basic industry. It is also distinctive in its lack of large-scale manufacturing. Private business is largely confined to mercantile trades, service establishments, and construction. These types of economic activity are the results rather than a primary cause of the city's growth and development."[2] Table 6 lists the percent of employed workers, by industry groups, in the National Capital region in 1940. The post-war (1947) percent of government workers is demonstrated in Table 7. While private business employs more people, the Government remains the significant economic influence.

The extent to which this influence dominates the planning of the communities in the Virginia area can be demonstrated by quoting a study done for Arlington County. "Arlington's economy is based on the functions of the Federal Government. Of the total labor force in 1950 (64,915), more than 57

2. National Capital Park and Planning Commission, Regional Aspects of the Comprehensive Plan, p. 10.

PLATE I

NATIONAL CAPITAL REGION

TOTAL POPULATION BY AREA 1900-1980

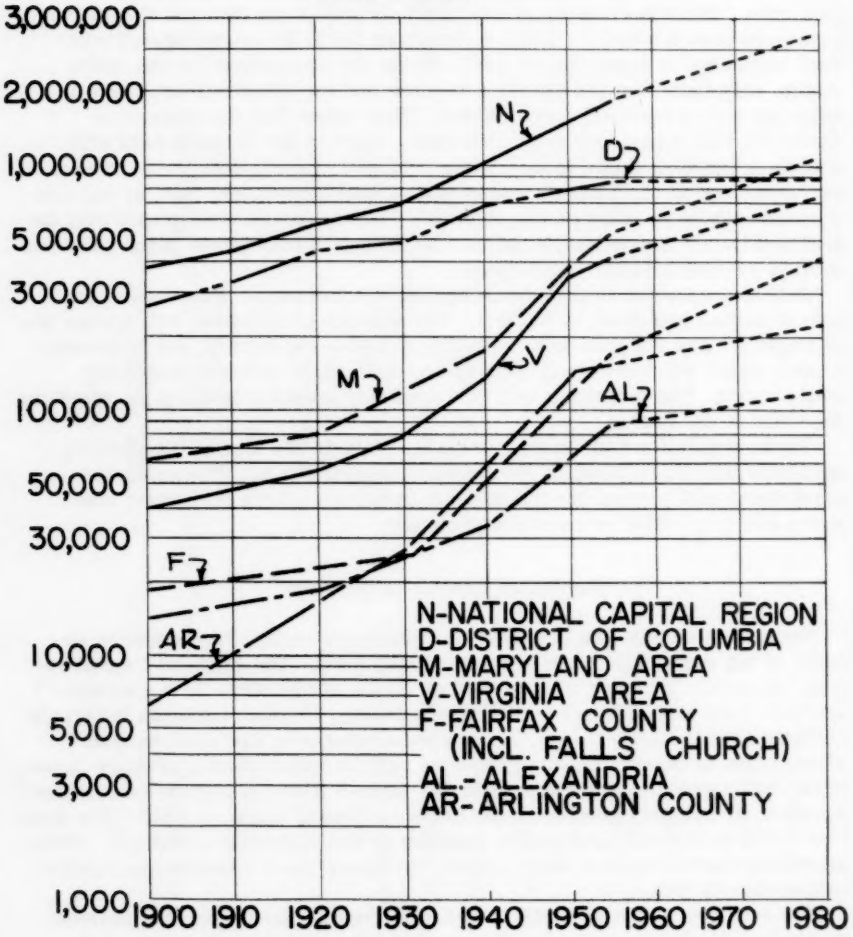

Fig. 2.

Table 4

NATIONAL CAPITAL REGION

Present and Estimated Future Population
1950-1980

	1950	1980			
		Thompson	Hoyt	Pickard (1)	Pickard (2)
National Capital Region	1,464,089	2,500,000	2,500,000	2,750,000	3,300,000
District of Columbia	802,178	900,000	900,000	900,000	940,000
Virginia Area	303,328	616,000	660,000	742,000	920,000
Alexandria	61,787	125,000	119,000	120,000	125,000
Arlington County	135,449	200,000	210,500	205,000	210,000
Fairfax County	98,557	280,500	320,000	403,000	585,000
Falls Church	7,535	10,500	10,500	14,000	a

SOURCE: 1950 - U. S. Census
1980 - Thompson, Lorin-Outlook for Population Increases in Northern Virginia
Hoyt, Homer-Economic Survey of Montgomery and Prince Georges Counties
Pickard, Jerome - (1) Population, Washington Metropolitan Area, Future Projections to 1980
(2) Address given at Conference for Community Chest Workers, Washington, September 22, 1956.

a - Included in Fairfax County.

Table 5

NATIONAL CAPITAL REGION

Area and Density
1955-1980

	Land Area	Population per Square Mile	
	Square Miles	1955	1980
National Capital Region	1,490.00	1,225	1,846
District of Columbia	61.00	14,016	14,754
Maryland Area	979.00	574	1,132
Virginia Area	450.00	906	1,649
Alexandria[a]	15.60	5,295	7,692
Arlington County	25.50	6,157	8,039
Fairfax County[a]	407	391	990
Falls Church	2.04	4,314	6,863

a - Alexandria annexed 7.5 square miles from Fairfax County in 1952.

b - 1980 density based on Pickard (1) estimate of population.

Table 6

NATIONAL CAPITAL REGION

Per Cent of Employed Workers
1940

Industry Group	District of Columbia	Area Outside Dist. of Cola.	National Capital Region
Government	29.0	26.4	28.2
Wholesale and Retail trade	17.0	13.3	16.0
Personal services	15.2	9.6	13.6
Professional and related services	9.7	8.7	9.4
Transportation	6.8	7.8	7.1
Construction	6.4	9.7	7.3
Finance, insurance, and real estate	4.7	4.0	4.5
Manufacturing other than printing	3.6	4.8	3.9
Printing	3.6	2.7	1.8
Business and repair services	1.7	2.0	1.8
Amusement, etc.	.8	.7	.8
Agriculture	.2	8.1	2.4
Mining	.1	.2	.1
Industry not reported (Total)	1.2	2.0	1.5
SOURCES: U. S. Census, 1940.	100.0	100.0	100.0

ASCE WOODWARD 1388-11

Table 7

NATIONAL CAPITAL REGION

Class of Employed Workers
April, 1947

Class of Workers	Total	Per Cent	Male	Per Cent	Female	Per Cent
Wage or salary workers	525,442	93	311,004	90	214,438	97
Private	305,810	54	187,090	54	118,720	54
Government	219,632	39	123,914	36	95,718	43
Self-employed workers	39,962	7	34,980	10	4,982	2
Unpaid family workers	1,590	.....	106	.....	1,484	1
Total Employed	566,994	100	346,090	100	220,904	100

SOURCE: Current Population Report, Series P-51, No. 1.

percent of Arlington's residents were employed by Federal (including military) and local government."[3]

A similar conclusion was drawn about the City of Falls Church. "On the whole, Falls Church is in an enviable economic position. Its citizens are the most highly educated in Virginia, have the highest average incomes, the highest living standards, and the lowest unemployment ratio. Their homes fall generally into the high value range ($15,000 plus) which produce enough taxes to support their share of municipal services. There is no blighted area. Continued prosperity, however, will be dependent primarily upon Federal government policies."[4]

While most authorities concede that the Federal Government will always be the primary economic factor in the National Capital region, local planners in the Virginia area are attempting to place their communities on as broad an economic base as possible. There are two main reasons for this aim. The first is to diminish the effect that would be caused by a slackening in Federal employment. The second reason is financial. As will be discussed later, the Virginia area is made up of "bedroom" communities. The preponderance of residential land places a severe strain on local budgets. Homes have a comparatively low taxable value, but demand relatively expensive services, such as water, sewage disposal, adequate school facilities, and so forth.

Normally the encouragement of industrial growth would be the logical answer. In this case, however, there is neither the market nor the location for large industry. Besides, a large amount of industry would not be acceptable to the residents of the area. Only a small amount of quiet, highly technical industry can be expected to develop in the Virginia area.

Rather than industry, planners hope to encourage retail stores and consumer services. With a large market area made up of comparatively high income families, there is room for large-scale commercial expansion. Typical of the modern methods for exploiting retail markets and sales is the gigantic new shopping center opened at Seven Corners in Fairfax County in October of 1956. The project contains forty-five stores, occupying 600,000 square feet of floor space, and is estimated to have a market value of close to ten million dollars. From this installation alone Fairfax County expects to collect $110,000 in 1957 from real estate taxes. Almost one thousand people are employed at the shopping center.[5] By providing employment, revenue, and community service, this shopping center demonstrates why other sections of the area hope to develop trade centers. Since the median family income is about $5,000 a year, and since there are over 80,000 families, the gross annual income of the Virginia area is in excess of 400 million dollars.[6] This large earned income combined with the continued increase in population indicates that the demand for retail goods and services will not be met without considerably more markets than are now in existance.

3. Office of Planning, Arlington County, Land Use in Arlington County, Virginia, p. 10.
4. Tarrant & Alten, Consulting City Planners, Background for Planning, p. 28.
5. Washington Post and Times Herald, October 3, 1956.
6. Office of Planning, Arlington County, Population Arlington County Virginia, pp. 37-40.

Land Use - Present and Proposed

Closely allied with general economic considerations is land use, both present and proposed. As was stated earlier, the Virginia area consists primarily of "bedroom" communities, satellites of the Federal employment centers. Therefore the dominant land use in the National Capital region is residential. Another large percentage of the land in the region is government owned. Only a small amount is used for commerce and industry, most of which lies within the District of Columbia. The percentage of vacant land varies with the distance from the District. Almost no land is vacant in the City of Washington. Within a five mile radius the percentage is low. Fifteen miles out there are large areas of undeveloped land. However, this land will soon be utilized, because of the continuing growth and expansion of the suburbs.

A comparison of present land use and zoning in two communities, Arlington County and the City of Falls Church, will bring out several factors of importance. Table 8 gives this comparison along with a proposed land use plan for Falls Church. Arlington, with such facilities as the Pentagon, the National Airport, and the Arlington Cemetery, has a high percentage of public land and land occupied by community services. The amount of vacant land is small because of the intensive development in Arlington County. Falls Church, farther out from the Capital, has little public land, but has a fair proportion of vacant land. Both communities are predominantly residential, and neither have important commercial or industrial holdings. Present zoning reflects the early use of the land and the desire of the communities to maintain a residential character. Since zoning was enacted comparatively early in the development of these communities, non-conforming uses (which tend to lower the value of a neighborhood) have been kept to a minimum.

In general, the Virginia area has not yet been caught by poor land management. However, unless land use plans are initiated soon, the area will become overgrown. "Plans for the future should seek to accomplish three major objectives with respect to future land use; namely, (1) to preserve and enhance all present development that meets satisfactory standards, (2) to eliminate obsolete, blighted development and replace it with a better arrangement of land use, and (3) to guide future expansion into a satisfactory pattern."[7] One of the most important measures is that a community must provide itself with enough public land to make adjustments in the future layout of the area. Arlington has come to this realization almost too late. The County needs land for parks, streets, and public buildings. However, as plate 2 demonstrates, vacant land is rapidly disappearing because of its attractiveness to private interests.[8] This rapid exploitation of vacant land is happening all over the Virginia area. The Planning Engineer of Falls Church, E. H. Grigg, Jr., comments, "The City of Falls Church has grown to the extent that now we are faced with the development of properties that have been culled out by previous developers, now requiring very expensive capital improvements per lot, which in turn results in both the loss of profit by the developer and a high purchase price by the home owner."[9] Aware of this

7. National Capital Park and Planning Commission, Regional Aspects of the Comprehensive Plan, p. 23.
8. Office of Planning, Arlington County, Land Use in Arlington County, Virginia, pp. 86-88.
9. E. H. Grigg, Jr., Private Communication, October 10, 1956.

Table 8

FALLS CHURCH AND ARLINGTON COUNTY

Per Cent of Land Use
1955

Class of Use	Present Land Use		Present Zoning		Proposed Land Use
	Falls Church	Arlington County	Falls Church	Arlington County	Falls Church
Single family dwelling	45.0	36.2	65.5	54.4	54.5
Multi-family dwelling	3.3	5.8	7.4	19.5	3.5
Commercial	3.1	4.8	5.9	4.1	11.1
Industrial	1.9	0.2	2.1	4.9	4.2
Public and Community Service	4.4	26.5	-	-	6.9
Streets and Alleys	14.9	13.3	-	-	19.8
Vacant	27.4	13.2	-	-	-
Not Zoned	-	-	19.1	17.1	-
Total	100	100	100	100	100

SOURCE: Office of Planning, Arlington County, Land Use, 1955
Tarrant and Alten, Land Use Plan.

ASCE WOODWARD 1388-15

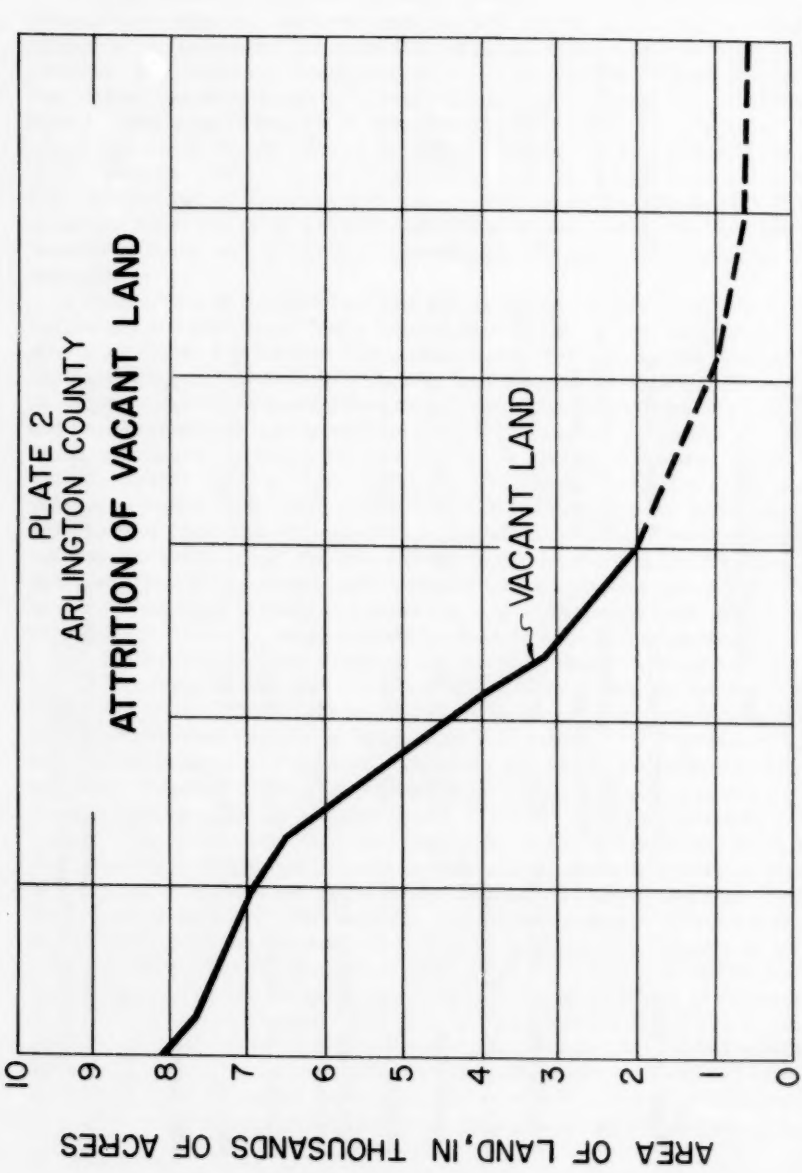
PLATE 2
ARLINGTON COUNTY
ATTRITION OF VACANT LAND
VACANT LAND
AREA OF LAND, IN THOUSANDS OF ACRES
0
1
2
3
4
5
6
7
8
9
10
1940
1945
1950
1955
1960
1965
1970

Fig. 3.

demand, Falls Church drew up a tentative land use plan. (note Table 8). Of particular importance is the increase in the amount of land set aside for public and commercial uses and also a small increase in the amount of industrial sites. These increases are the result of the desire to broaden the economic base of the city and to provide a cushion of public land for future uses. Land use plans are vital tools by means of which the planner can produce in a community many desirable characteristics.

Transportation Problems

Highways

The value and possible uses of land are greatly dependent on adjacent transportation facilities. Of primary importance in the Virginia region is highway transportation. Not only is the area densely populated itself, but it is a part of a large and even more thickly settled region. The importance of traffic in the area can be demonstrated by a comparison of the number of cars crossing the Potomac River with the number crossing the Hudson between Manhattan and New Jersey. More vehicles travel daily between Virginia and Washington than cross the Hudson River.[10] In the State of Virginia every mile of rural primary roads is subjected to an average usage of two thousand vehicle-miles in a year. In Fairfax County every mile withstands five thousand vehicle-miles. The average figure for Arlington County is fifteen thousand.[11]

What is the outlook for the future? Wilbur Smith predicts that the number of vehicles owned in the Virginia area will more than double between 1953 and 1973.[12] When compared with projected population figures, this estimate of car ownership is not extravagant. Obviously whatever traffic problems that exist now will be doubly magnified in twenty years.

There are two major types of highways in the Virginia area. One type consists of radial roads extending from the Potomac River bridges to the outskirts of Fairfax County. The most important are U. S. Routes 1, 50 and 29-211, State Routes 237, 244 and 350 (Shirley Memorial Highway), and the Mount Vernon Memorial Highway. The second type consists of circumferential and cross-county routes. The primary ones are the Pentagon Loop and State Routes 7, 120 and 236.[13] These eleven highways (shown on map 2) are the main traffic carriers in the Virginia area.

In recent years, several studies have been made to measure the present performance of traffic arteries in the area and to determine what must be done in the future to guarantee satisfactory vehicular flow. Of especial importance are two such studies, one by Wilbur Smith for the Virginia State Highway Commission, the other by the Regional Highway Planning Committee for Metropolitan Washington. None of the main roads in the Virginia area, with the exception of State Route 350 (Shirley Highway), have been found to meet present traffic demands. Practically every intersection of major highways is congested even during off-peak hours. Needless to say, congestion is

10. Wilbur Smith, Highway Transportation in the Washington Metropolitan Area of Virginia, p. 4.
11. Ibid, p. 12.
12. Ibid, p. 35.
13. Ibid, p. 9.

MAP 2

PRIMARY HIGHWAYS

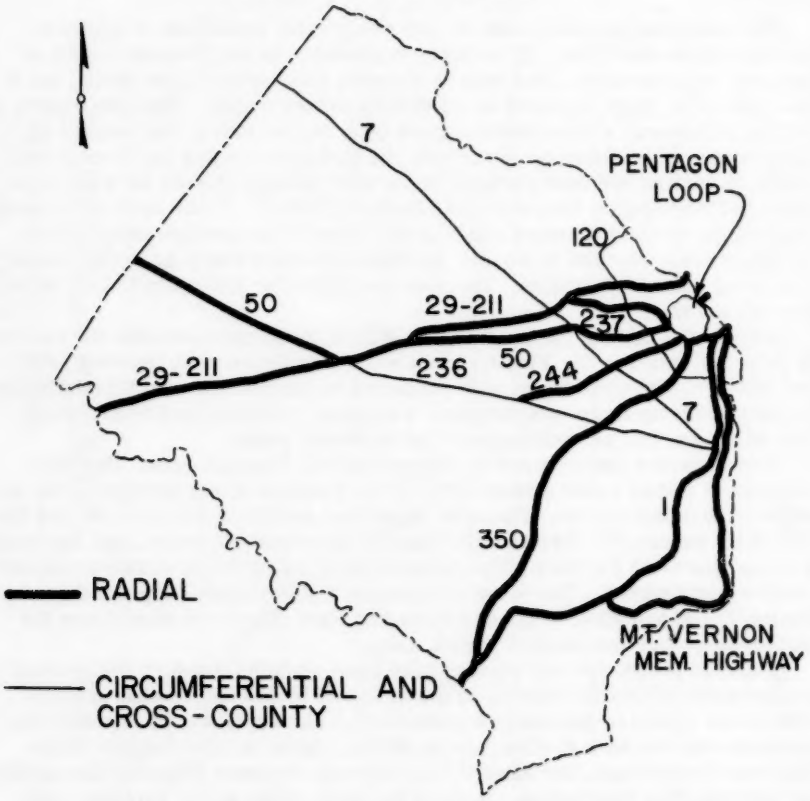

Fig. 4.

terrific at peak hours. Analysis of future demand paints an even grimmer picture. Even the Shirley Highway will be overloaded in a few years. By 1973 Wilbur Smith estimates it will be called upon to carry almost twice its practical capacity.[14]

What can be done? Both studies offer similar plans. Present roads must be improved by repairing, widening, eliminating grade crossings at many intersections, and limiting access to certain routes. One such project is underway at Seven Corners. A complicated intersection to begin with, this trouble-spot was made worse when the aforementioned shopping center was recently completed. Fortunately the Virginia State Highway Department is currently building a million dollar interchange to eliminate this bottleneck. Improvement of present roads will not solve future highway problems, however. The answer lies in a system of controlled-access expressways. Whereas there are many proposals as to exact routes, all those who have studied the area agree that such a system must contain two parts. The first would consist of a series of radial expressways, fanning south and west from the Potomac. Additional bridges across the river would also be necessary. To accommodate cross-traffic, a second series of expressways must be built. Wilbur Smith envisions two such roads, one making an arc through Arlington and a second circling through Fairfax County, just outside of Falls Church and Alexandria.[15]

Because of the expense involved, these improvements cannot be handled by local communities. Rather, since cost estimates run to many millions of dollars, the State and the Federal Government must share the bill. Indeed, after studying the feasibility of toll roads, Smith concludes that only the Federal Government has the resources to complete the program within a reasonable length of time.[16]

Although local governments are not expected to solve regional traffic problems, there are many smaller worries that plague each community. Every locality must plan its own circulation system. The planner must keep in mind certain general objectives. Among these are the following:

"1. To remove unnecessary and unrelated traffic from the community.
2. To channel commercial traffic directly to and from the commercial and industrial centers
3. To provide easy access to the shopping centers from all directions and especially from the areas beyond the community property.
4. To provide convenient access to other traffic focal points or generators.
5. To relieve the residential areas of all traffic that has no business within those areas."[17]

Until recently traffic patterns have developed with little or no planning. To accomplish the previously mentioned objectives, a planner in any of the Virginia area communities must use foresight and imagination. One of the main problems in a business center is congestion at intersections. Temporary or permanent relief can often be effected by judicious use of one-way streets, traffic signals, extra lanes, and no parking sectors. These and other

14. Ibid, p. 85.
15. Ibid, p. 44.
16. Ibid, p. 87-90.
17. Tarrant and Alten, Consulting City Planners, Transportation, p. 1.

problems are being tackled by the respective planning agencies in the Virginia area without any necessity of regional cooperation. Some problems, however, develop on the local level, but have far-reaching consequences. Of particular importance is the traffic going from one community to another. At times the interests of the community and the region appear to conflict. A good example is the problem of locating the proposed radial expressways. One possible site is through Falls Church. This plan is unsatisfactory to Falls Church because the road would take away needed land and become a barrier, splitting a residential neighborhood in half. Obviously the expressway must go somewhere. The job of the planners is to decide what route is the most satisfactory and causes the least hardship.

Parking is another major problem facing Virginia area communities. Because of the rapid growth in population and total income of the area, many retail centers have sprung up. These businesses form a vital part of the local economy. Easily accessible parking is one of the major items that a consumer looks for when he chooses his markets. Shopping centers with acres of car space testify to the advantages of providing the necessary facilities. For the convenience of the buyer and the welfare of the seller, a planner must arrange for an abundance of parking near the stores. A common requirement in zoning ordinances is that every new building must provide parking spaces commensurate with the building's function. Falls Church has found, however, that these individual parking lots must be periodically surveyed in order to study possible consolidation of small lots into more efficient areas.[18]

Streets and highways must be considered not only from the standpoint of cars, but also from that of trucks and buses. Trucks are not so much a problem in the National Capital region as in other metropolitan areas because of the smaller amount of commercial and industrial business located around Washington. In general trucks are routed away from scenic highways and residential streets. The expressway system must be designed to carry much of the through truck traffic. Buses, on the other hand, tend to relieve metropolitan traffic rather than to aggravate conditions. One bus causes much less congestion than fifteen or twenty cars. Unfortunately Fairfax County is not densely enough settled to support a large bus system. Even the more thickly populated areas to the east are predominantly car driving communities. Although courteous and efficient bus service which would attract customers is primarily up to the transit companies. The planner can encourage mass transportation. He should look for routes which would support bus service and would allow reasonably rapid trips. He should plan terminal and transfer facilities as a community service. Regional planners must consider the possibilities for turnouts and other devices which would permit bus lines to run fast, efficient, and attractive service along the expressways. Increased use of mass transportation in the National Capital region would alleviate congestion on streets and highways.

Rail, Air, and Water

Other forms of transportation cause few problems in the Virginia area. The main rail line south from Washington runs just west of the Potomac through Arlington and Alexandria. Other than this line, there are only a few

18. Ibid, pp. 24-29.

freight spurs which branch out into the area. Since a large amount of industry is not desired, and since there is insufficient demand for commuter services, the lack of rail facilities is not a problem in the Virginia area. Considering the entire National Capital region, present rail service in Washington "is generally adequate to serve the anticipated growth of the region inasmuch as it was able to handle the great expansion of railroad operations which occurred during World War II."[19]

Air transportation is becoming increasingly important in the Washington area. Joint studies of airport needs are being made by the Civil Aeronautics Administration and the National Capital Park and Planning Commission. Thus air transportation is only an indirect problem to planners in the Virginia area. Selection of sites in Virginia for new airports would have two effects on the surrounding land. First, an airport would increase traffic problems on nearby highways. Secondly, airports generally lower the value of surrounding residential property.

The only major waterway in the area is the Potomac River. While a moderate amount of commercial shipping uses the river, Washington cannot be classed as an important port. The Potomac is not a factor in the economy of the Virginia area. Possible development of the river is being studied by the Corps of Engineers. At present, the Potomac as a means of transportation is of no great concern to the planners in the Virginia area.

Water-Supply

Although people usually take their water supply for granted, a planner cannot afford to be complacent. The water must be adequate both in quantity and quality. On both counts communities in the Virginia area are urgently interested. The National Capital region is located in the Potomac River basin. This basin covers an area of over 14,500 square miles in four states and the District of Columbia. In 1936 the Interstate Commission on the Potomac River Basin was formed to study water supply and sewage disposal on the entire Potomac River watershed. The Commission found that in 1943 over one and one-third million people and numerous industries consumed an average of six hundred million gallons of water daily. A paragraph of the Commission's report published in 1945 deals with the amount of available water.

"During the drier periods of the year the waters of the Potomac and its tributaries must be reused several times by industrial and domestic consumers. In other words, the sewage, industrial waste, and cooling water from one community or industry must be used in whole or in part as the drinking water and as a water supply for industrial purposes at communities or industries next downstream. In most cases in the Basin, however, the community or industry using the water a second or third time is a considerable distance downstream from the sources of pollution."[20]

This report was made over ten years ago. Since then the National Capital region, which contains over half the basin's population, has grown rapidly. In 1955 the Virginia Advisory Legislative Council published a report on water resources, covering the part of the Potomac River basin in Virginia. With

19. National Capital Park and Planning Commission, Regional Aspects of the Comprehensive Plan, p. 40.
20. Interstate Commission on the Potomac River Basin, The Potomac River Basin, An Introductory Report, p. 36.

about forty percent of the area and about twenty-five percent of the population of the entire basin, the Virginia section consumed over 500 million gallons daily for industrial and domestic consumption.[21] This is just short of the consumption of the entire basin ten years ago! Several small communities in Fairfax County depend not on surface water supply, but on ground water. The 1955 report remarks that in this area "the water table has lowered considerably in recent years."[22]

These facts are borne out by the recent experience of two communities in the Virginia area. The Town of Fairfax is at present served by twelve deep wells. To provide for the rapid development in the area, a 4.5 million dollar bond issue was just passed for an impounding reservoir and treatment facilities.[23]

The consumption of water in Arlington County rose from three million gallons daily in 1940 to thirteen million gallons daily in 1953. The ever-increasing demand necessitated a ten year program costing 5.8 million dollars.[24] Part of this program has already been completed. Continued expansion in the Virginia area will call for similar plans by other communities. Water supply could easily be called a "million dollar" problem.

Sewage Treatment and Disposal

As was pointed out earlier, much of the water taken from the Potomac is returned to the river in the form of sewage. Although a large river can absorb a sizable amount of sewage without becoming polluted, a definite capacity exists, beyond which the river is unusable for recreational uses and devoid of animal and plant life. If polluted water is needed for reconsumption, it must undergo costly treatment. The rapid growth of the National Capital region has resulted in vast quantities of raw or nearly raw sewage being dumped into the Potomac River, causing it to become extremely polluted in the Washington vicinity.

The four communities in the Virginia area recognized the polluted condition of the Potomac and the need for corrective measures. They also realized that the problem could be solved only by cooperation among all parties. Accordingly, in 1950, an Interim Committee on Sewage Disposal was formed. With the help of consulting engineering firms, the Committee initiated studies to determine what facilities would be needed. In June, 1954, the final recommendations were made. These were based on a gradual improvement in the facilities of each community so that sewage in all sections would be about 75% treated by 1970. Since Maryland and the District of Columbia contribute three-fourths of the sewage to the river, the report assumed that current plans in those areas would also be carried out. The program was spread out over a number of years because of the problems of financing the projects. In the next thirty years, Arlington tentatively expects to spend nine million

21. Virginia Advisory Legislative Council, Water Resources of Virginia, p. 36.
22. Ibid, p. 69.
23. William N. Zollman, Jr., Assistant Town Engineer of Fairfax, Private Communication, October 4, 1956.
24. Alexander Potter Associates, Report on Water Supply and Distribution System Improvements, p. S-1 and S-2.

dollars on sewage disposal.[25] Other communities will have to allocate similar sums of money. Since the problem has already passed the planning stage, success in the task of cleansing the Potomac depends primarily on the manner in which the individual areas live up to their commitments in the next fifteen years.

The Future

Many other problems face the planners in the Virginia area of the National Capital region. How many schools and libraries are needed? How many houses will be built next year? Is the fire and police service adequate? The questions are endless. Some must be answered by the planner himself. Others are handled primarily by specialized groups, such as the School Board and the Police Commission. Even so, the planner is affected. Truly, anything that affects life in the community is the rightful concern of the planner. The planner must think in the past, the present, and the future. He must, however, do more than just think—he must produce concrete proposals. He must, as his name implies, have plans—definite, feasible plans that can be accepted by the community or region. This last requirement—definite, accepted plans—is what has thus far stymied the National Capital region.

"In the final analysis, appropriate development of the National Capital and its environs will depend upon:

1. Widespread public realization that the National Capital area must have a plan and that the area should change and develop according to an official plan;
2. Alert and vigorous planning, backed by adequate legislation requiring both public and private development to be coordinated with the plan;
3. Presence of a carefully drawn, thoroughly agreed upon and officially adopted comprehensive plan that is continuously studied and kept up to date, representing always the latest and best program for the future development of the entire metropolitan community."[26]

SUMMARY

Many different planning organizations are at work today in the Washington area. The impetus for such widespread activity has been the explosive population growth. Within twenty-five years, three million people will inhabit the area. The region will still depend primarily upon the Federal Government for its economic welfare even though the suburbs are attempting to diversify their economy. Although rail, air, and water transportation facilities are not major problems, highway needs must be met. If roads, both regional and local, are not improved, the area will be strangled by an inescapable web of traffic. The population explosion has also created problems of water supply and sewage disposal. The health of the area is dependent upon the proper enlargement of these facilities. The solution to the problems confronting the

25. Sewage Disposal in Northern Virginia, pp. 1-9.
26. National Capital Park and Planning Commission, Regional Aspects of the Comprehensive Plan, p. 47.

entire region necessitates comprehensive, coordinated planning by all the communities involved.

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REDEVELOPMENT OF PROVIDENCE, RHODE ISLAND[a]

Donald M. Graham,[1] A.M., ASCE
(Proc. Paper 1425)

The picture that comes to mind at the mention of a New England city might be this: It's an old city; it has an illustrious and historic past; architectural treasures of early days can be found in it. It is a mill town; old brick or stone multi-story loft buildings that long had made cloth or shoes dominate its industrial areas, and are built close upon the streets and housing areas. But it is no longer a Yankee town, for it is now the home of newer Americans from Ireland, England, France, Italy, Canada. The homes they found when they arrived are the structures that dominate its older neighborhoods: two and three decker frame structures built on small lots and narrow streets, often with additional tenements built in the small back yards. In short, its industrial plant is largely obsolete, its older residential areas crowded and bleak.

For the past three decades the New England city has been suffering economic woes. Its textile mills have been shutting down. It has been getting new industry in but not fast enough—machine tools, plastics, electronics, jewelry, rubber goods—and it is frequently classed as a depressed area.

Its housing has suffered. Many of its residential areas were built blighted or have become blighted; its blighted areas are becoming slums; its slums have been growing. Even its better neighborhoods are losing their attractiveness. Its people are being drawn to the green and open suburbs or to the fast-growing Western cities.

Providence, Rhode Island, is such a New England city. It shares all these problems with its sister cities of the region. But it was one of the first to recognize, right after World War II, that drastic steps must be taken to counteract this dreary trend.

In 1945 the City of Providence reactivated its Plan Commission, with the aid and encouragement of the Providence Chamber of Commerce and the

Note: Discussion open until March 1, 1958. Paper 1425 is part of the copyrighted Journal of the City Planning Division of the American Society of Civil Engineers, Vol. 83, No. CP 2, October, 1957.

a. Presented at a meeting of the American Society of Civil Engineers in New York, N.Y., October, 1957.

1. Planning Administrator, Boston City Planning Board, Boston, Mass., formerly Executive Director, Providence Redevelopment Agency, Providence, R.I.

Providence Journal-Bulletin, and the Plan Commission went right to work in the preparation of a master plan for land use and population distribution, for thorofares, for schools, for playgrounds and playfields, and for redevelopment of residential areas.

In 1946 the Community Redevelopment Act was passed by the Rhode Island General Assembly and in 1947 the Providence Redevelopment Agency was activated. Thus it is one of the first redevelopment agencies in the country.

Back in those years a severe housing shortage existed, and the Agency saw as its first duty adding to the housing supply by developing one of the eight areas on the edges of the City designated as arrested blighted redevelopment areas by the Plan Commission and so officially classified by the City Council in 1948.

The Agency was stopped in its tracks in these efforts by an advisory opinion in 1949 to then Governor Pastore by the Supreme Court in which three of the five justices indicated that they failed to see how the redevelopment of arrested areas could be considered a public purpose under the Constitution of Rhode Island. How could vacant land adversely affect the public health, safety, and welfare?

In the face of a housing shortage, the Agency turned its attention to the nine slum blighted redevelopment areas established by the City Council by ordinance in 1948. These deteriorated areas contained 25,000 of the City's 74,000 dwelling units.

A Comprehensive Preliminary Survey and System of Priorities

Fortunately by this time, 1949, the Federal Housing Act had been passed, and a $100,000 preliminary advance was obtained from the old Division of Slum Clearance and Urban Redevelopment to study in detail twelve survey areas within these redevelopment areas, carefully selected to encompass almost all of the worst housing within the city. To relate these survey areas properly to their surroundings, the Agency was authorized in the preliminary advance to analyze conditions and to prepare sketch plans for the eight planning districts within which the twelve survey areas were located. In current terminology these planning districts could be called renewal areas.

The preliminary advance program established a system of priorities for redeveloping the survey areas. Seven first priority projects were delineated, three for industrial re-use and four for housing, recreation and shopping re-use. The total net project costs for these seven projects were estimated at $7,750,000. Four second priority projects were delineated, two for commercial re-use and two for housing and recreation re-use. For these the net project costs were estimated at $4,400,000. These eleven first and second priority projects included 300 acres and 5000 dwelling units. The survey areas covered 800 gross acres and contained 11,000 dwelling units. There are 12,000 acres and 74,000 dwelling units in the City of Providence.

In this system of priorities, of course, the costs of carrying out the program exceeded the initial federal capital grant reservation ($1,165,000) and the local funds available for redevelopment purposes ($2,000,000). Even without including the costs of public improvements within the larger planning districts or urban renewal areas surrounding the slum cores it became quite clear that a comprehensive and thorough job of clearance and redevelopment would be beyond the forseeable financial authorizations of abilities of the local and Federal governments.

The Pilot Projects

Nevertheless it was important to make a start in slum clearance, and the first objective was to establish the constitutionality of the State Act. First, though, it was clear from the Advisory Opinion of 1949 that it would be advisable to make certain adjustments in the Act, separating out, among other things, arrested areas from deteriorated areas. This was done, and the Slum Clearance and Redevelopment Act of 1950 was enacted.

On the advice of bond counsel it was decided to seek a fully litigated case. In order to get any property owner concerned enough to sue the Agency, it was necessary for the Agency to obtain authority to acquire some specific land area. In short, a redevelopment plan for a project area approved and adopted by the City Council was needed.

In view of the "urban renewal" approach the Agency was taking even in its earliest studies, that is, relating slum clearance to comprehensive neighborhood improvement, it was difficult to isolate such a small, test-case clearance project. Finally an eight-acre area was selected consisting of one-quarter of a district slated for industrial redevelopment. It was a well-defined area bounded on the east by existing substantial industry, on the north by a proposed Freeway location, on the south by a major street, and on the west by the South Providence residential neighborhood, a potential renewal area.

This was the Point Street area. The Tentative Plan was approved by the City Council in December 1950 and the Redevelopment Plan was approved by the City Council in May 1951. A Loan and Grant Contract for this project was executed in December 1953.

In July 1951, the Agency was sued, unsolicited, by a property owner within the project area. That case was a genuinely hostile one, and as is often the practice in such cases, it was clear that every conceivable delaying tactic would be used. Thus it soon became evident that another suit would be required. In September 1951 a suit was brought by another property owner with a more enlightened determination to see the basic questions settled. In 1952 the Supreme Court of Rhode Island ruled, by a 3-2 split decision, that the Slum Clearance and Redevelopment Act, insofar as it related to slum blighted areas, was constitutional. The arrested area provisions were not tested. The decision was the first in New England to establish the constitutionality of redevelopment.

As the Agency staff awaited the court decision, planning for a second clearance project got underway. This was the Willard Center project in the heart of the South Providence potential renewal area. Since the present renewal legislation was not then available, an attempt was made to achieve as many renewal objectives as possible within the boundaries of this clearance project. These objectives were:

1. The elimination of a core of slum housing in the heart of a residential neighborhood of potentially greater value and livability.
2. The elimination of a congested street of dilapidated stores.
3. The removal of a detrimental center of junkyards.
4. The provision of open spaces in a neighborhood of 16,000 people virtually devoid of open spaces.
5. The provision of a modern elementary school to replace the existing small, obsolete and inadequate schools serving the neighborhood.

6. The provision, for the first time in the area, of an adequate playground adjacent to the school.

7. The provision, for the first time in the area, of a playfield large enough for baseball and football, and

8. The provision of a shopping center with sufficient off-street parking in which the present merchants in the area could revitalize their fading businesses.

Just as Point Street was serving as the legal test case, Willard Center was to serve as the operational pilot area. To facilitate this process the decision was made to divide the project into two units. Willard Center Unit One is a four-acre project for which the Tentative Plan was approved in March 1953 and the Redevelopment Plan in July 1953. The Loan and Grant Contract was executed in January 1954. The land was acquired by condemnation in March 1954, clearance was accomplished, and the construction of the school building is now virtually complete.

Willard Center Unit Two is an area of 15 acres. The Tentative Plan was approved in November 1953 and the Redevelopment Plan in May 1954. The Loan and Grant Contract was executed in August 1954. Clearance of this project is well along and the land for the shopping center has been sold. The redeveloper is the Willard Center Realty, Inc., a corporation created for the purpose and made up of merchants located within the project site. The shopping center building has been completed and the first merchants have been relocated into the new building. When their removal to the new building has been completed, their old stores will be demolished, and the clearance of the total project area will have been accomplished.

Redevelopment for Industry

As Willard Center marks the first successful redevelopment effort in slum clearance for purposes of residential neighborhood improvement, so too, must the industrial plant of the city be regenerated. The Agency was hopeful that the Point Street project would have been free of the courts soon enough to serve as the city's introduction to redevelopment for industry.

In 1955 the Point St. project remained up in court, however, and a larger scale, modern industrial district of efficient size within the city was the next industrial project off the drafting boards. The obsolete industrial plant of the typical New England city cannot continue to compete with new facilities elsewhere. A large site for an integrated industrial district was a possibility in Providence because of the circumstances of terrain, transportation, land use, and existing slum conditions and the opportunity to provide it through redevelopment was seized. This is the West River project, an area of 60 acres. It lies on the main line of the New Haven Railroad, and it will be served directly by the proposed Louisquisset Pike to Worcester and the proposed North-South Freeway designed to accommodate the Boston-bound traffic.

The Loan and Grant Contract for West River project was executed in September 1956, the Agency took title to the land in December 1956 and demolition of the 507 buildings on the site is well along at the present time.

The Advent of Urban Renewal

From its inception the Providence Redevelopment Agency was thinking in "renewal" terms—planning for the improvement of entire neighborhoods—while it developed, with the powers then available, projects for the clearance of core areas of slum within the neighborhoods. It felt that urban redevelopment, logically, and almost inevitably, would evolve into urban renewal: a comprehensive, simultaneous slum clearance and slum prevention effort. In 1953, in anticipation of broader Federal assistance under a new housing act, the Providence Redevelopment Agency initiated studies in its pilot urban renewal area—that is, it started precising the sketch plans prepared three years earlier for one of the planning districts under the preliminary advance program.

As a hedge against the possibility of the Housing Act of 1954 failing to pass, two projects, Lippitt Hill and Constitution Hill, were put under contract with the old Division of Slum Clearance and Urban Redevelopment under the provisions of the Housing Act of 1949. It was expected, however, that the Agency would request revisions in boundaries and new contracts when plans for the area were further precised to take advantage of the provisions of the new Act.

Plans for the first rehabilitation area, Lippitt Hill, are currently being completed. This is a 60 acre tract of substandard housing immediately adjacent to stable neighborhoods and considered potentially stable itself because of this proximity and other favorable locational and site characteristics.

As the new Act was enacted, the City of Providence realized it could take even further advantage of its provisions than it had anticipated. Consequently the development of plans for one of the proposed renewal projects was postponed and a demonstration grant was substituted.

The proposed Constitution Hill renewal project area is part of the College Hill community, the location of Brown University, The Rhode Island School of Design, the first Baptist Church in America, and some of the finest architectural treasures in the country. The Constitution Hill project was aimed at making a start at the rehabilitation of some of the more deteriorated portions of this area in a manner consistent with its still remaining early American charm. However, it was obvious that the total College Hill community should be looked at as a unit in order to best evaluate its historical and architectural heritage and to best incorporate this into a plan for the comprehensive renewal of the College Hill area. The renewal of such an area would require the skillful blending of present day amenities with deliberately preserved Federal era characteristics. Consequently, the Providence City Plan Commission with the financial support of the Providence Preservation Society has entered into a demonstration grant contract with the Urban Renewal Administration to prepare such a plan. The redevelopment action required will follow the completion of this study.

Recognizing its role as a participant in comprehensive neighborhood renewal the Redevelopment Agency was active during several years in developing a Housing Code for the City of Providence. In May 1953 Mayor Walter H. Reynolds named an Advisory Committee on Housing to develop such a code and the Agency staff serviced this Advisory Committee. The Housing Code has now been adopted and is being enforced on a systematic basis by a newly established Division of Minimum Housing Standards. To coordinate all of this expanding renewal activity, Mayor Reynolds this year named an Urban Renewal Coordinator.

During 1955 the Agency had the opportunity to expand its redevelopment powers to encompass the powers required for comprehensive urban renewal by means of an amendment to the Constitution of the State of Rhode Island. A Constitutional Convention was being called for the purposes of determining tenure for judges and for changing the pay scale for the members of the General Assembly. Governor Dennis J. Roberts, always a staunch supporter of redevelopment, felt that the Constitutional Convention should also consider the redevelopment question. The voters authorized its inclusion in the Convention call, and consequently an amendment was drafted, reviewed, discussed and finally approved by a bi-partisan committee of the Convention. The amendment received the support of both parties in the Convention and, at a special election in July of 1955 the amendment was overwhelmingly approved by the voters of the State of Rhode Island, while incidentally, the other two proposed amendments to the Constitution were being rejected. It was clear then that the people of Rhode Island recognized that urban renewal was essential to the welfare to their old communities, and they endorsed it as a constitutional public power.

To implement this constitutional authority for urban renewal, the General Assembly in 1956 enacted the "Redevelopment Act of 1956."

What's Ahead for Redevelopment in Providence

On July 13, 1956, the long legal battle involving the Point Street project finally came to an end. At this time the Supreme Court of Rhode Island delivered its unanimous opinion sustaining the Agency's appeal from a Superior Court's decision 18 months earlier which had recognized the Agency's right to take all but one of the properties of the Point Street area. The Supreme Court recognized the authority in an Agency in accordance with Rhode Island law to determine which properties must be taken to accomplish the public purpose in redevelopment in a project area.

This successful conclusion, after nearly five years of litigation, put the Agency into a position to make several revisions to the Point Street project plan now required by the events that had taken place affecting the Point Street area during its long court battle. The site of the project had been reduced by expansion of a jewelry plant, and it will be necessary to revise the site plan to accommodate a portion of the proposed revised route of the North-South Freeway, the construction of which is accelerated by the Interstate Highway program.

The next project scheduled in the Providence program is Randall Square. An expansion of the West River industrial project, this project is designed to eliminate some rock-bottom slum housing, a blighted commercial area, and entangled traffic conditions, and to replace them by an organized area for industrial and heavy commercial uses and improved traffic facilities.

The next project in line will be a campus and recreational facilities for the Central and Classical High Schools located on adjacent cramped sites just south of the central business district. The Providence program so far has had slum clearance projects designed to provide new facilities for a neighborhood, a small industrial redevelopment project, a large industrial redevelopment project, a neighborhood renewal project, and with the Central-Classical project the opportunity arises to improve some community facilities that serve the entire city. This project will also tie in closely with a

second Federal demonstration grant being undertaken by the City Plan Commission. This one, being done in collaboration with the Downtown Business Coordinating Council of the Greater Providence Chamber of Commerce, is the preparation of a master plan for the central business district.

Next, the issue of redevelopment of arrested areas will be faced. Tentative plans have been prepared for such an area—Mashapaug Pond in the Agency's early days. Soon this area must become a test case and a redevelopment project, for as densities in redevelopment projects are reduced through clearance, and in renewal areas through clearance, rehabilitation and housing law enforcement, the supply of housing must be increased in the arrested areas and in the suburban communities.

Large though these efforts are for a city of 248,000, a further look ahead must be made. A start has been made on clearing slum cores; there are other slum pockets in the city that must be removed. Planning is underway in a pilot renewal area, but the clamor for renewal activities in other neighborhoods that's beginning to be heard must be heeded. Continual improvement of industrial, commercial, and the transportation facilities with the aid of renewal powers must be made.

The first bond issue for redevelopment purposes, for $2,000,000 was approved in 1948. A second one for $2,500,000 was approved in 1955. A third one will be needed soon. It is a struggle for a financially strapped mill town like Providence, caught between increasing costs and failing revenues, to provide its share of funds for even the smallest redevelopment project. The available Federal funds must be apportioned among many communities. But an equally hard fact is that our aging central cities cannot prosper without drastic alteration of their land use pattern and revitalization of their facilities. Federal funds for renewal purposes will be needed in increasingly large amounts unless new sources of revenue can be tapped by the cities.

Beyond these concerns there is yet another. An individual city, even the central city, can carry its efforts toward renewal and modernization only so far on its own. Sooner or later the fact must be faced that the physical unit that must be dealt with is the urban district, not a political jurisdiction within it. Sooner or later the administrative and financial tools must be provided which will enable the housing supply, the community and transportation services and facilities, and the industrial complex to be replaced, renewed, and added to according to a comprehensive physical and financial plan for the entire metropolitan district. This is the new frontier for coping adequately with the problems of the old New England city—or any city.

PROCEEDINGS PAPERS

The technical papers published in the past year are identified by number below. Technical-division sponsorship is indicated by an abbreviation at the end of each Paper Number, the symbols referring to: Air Transport (AT), City Planning (CP), Construction (CO), Engineering Mechanics (EM), Highway (HW), Hydraulics (HY), Irrigation and Drainage (IR), Pipeline (PL), Power (PO), Sanitary Engineering (SA), Soil Mechanics and Foundations (SM), Structural (ST), Surveying and Mapping (SU), and Waterways and Harbors (WW), divisions. Papers sponsored by the Board of Direction are identified by the symbols (BD). For titles and order coupons, refer to the appropriate issue of "Civil Engineering." Beginning with Volume 82 (January 1956) papers were published in Journals of the various Technical Divisions. To locate papers in the Journals, the symbols after the paper numbers are followed by a numeral designating the issue of a particular Journal in which the paper appeared. For example, Paper 1113 is identified as 1113 (HY6) which indicates that the paper is contained in the sixth issue of the Journal of the Hydraulics Division during 1956.

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DECEMBER: 1113(HY6), 1114(HY6), 1115(SA6), 1116(SA6), 1117(SU3), 1118(SU3), 1119(WW5), 1120(WW5), 1121(WW5), 1122(WW5), 1123(WW5), 1124(WW5)[c], 1125(BD1)[c], 1126(SA6), 1127 (SA6), 1128(WW5), 1129(SA6)[c], 1130(PO6)[c], 1131(HY6)[c], 1132(PO6), 1133(PO6), 1134(PO6), 1135(BD1).

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AUGUST: 1330(HY4), 1331(HY4), 1332(HY4), 1333(SA4), 1334(SA4), 1335(SA4), 1336(SA4), 1337(SA4), 1338(SA4), 1339(CO1) 1340(CO1), 1341(CO1), 1342(CO1), 1343(CO1), 1344(PO4), 1345(HY4), 1346(PO4)[c], 1347(BD1), 1348(HY4)[c], 1349(SA4)[c], 1350(PO4). 1351(PO4).

SEPTEMBER: 1352(IR2), 1353(ST5), 1354(ST5), 1355(ST5), 1356(ST5), 1357(ST5), 1358(ST5), 1359(IR2), 1360(IR2), 1361(ST5), 1362(IR2), 1363(IR2), 1364(IR2), 1365(WW3), 1366(WW3), 1367(WW3), 1368(WW3), 1369(WW3), 1370(WW3), 1371(HW4), 1372(HW4), 1373(HW4), 1374(HW4), 1375(PL3), 1376(PL3), 1377(IR2)[c], 1378(HW4)[c], 1379(IR2), 1380(HW4), 1381(WW3)[c], 1382(ST5)[c], 1383(PL3)[c], 1384(IR2), 1385(HW4), 1386(HW4).

OCTOBER: 1387(CP2), 1388(CP2), 1389(EM4), 1390(EM4), 1391(HY5), 1392(HY5), 1393(HY5), 1394(HY5), 1395(HY5), 1396(PO5), 1397(PO5), 1398(PO5), 1399(EM4), 1400(SA5), 1401(HY5), 1402(HY5), 1403(HY5), 1404(HY5), 1405(HY5), 1406(HY5), 1407(SA5), 1408(SA5), 1409(SA5), 1410(SA5), 1411(SA5), 1412(EM4), 1413(EM4), 1414(PO5), 1415(EM4)[c], 1416(PO5)[c], 1417 (HY5)[c], 1418(EM4), 1419(PO5), 1420(PO5), 1421(PO5), 1422(SA5)[c], 1423(SA5), 1424(EM4), 1425(CP2).

c. Discussion of several papers, grouped by Divisions.

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